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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the specific legal requirements and detailed technical rationale that serve as the basis for the requirements of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

WDID	**5C220701004**
Discharger	**United States Department of the Interior, National Park Service, Yosemite National Park**
Name of Facility	**Wawona Wastewater Treatment Facility (WWTF)**
Facility Address	**4004 Chilnualna Falls Road**
	Wawona, CA 95389
	Mariposa County
Facility Contact, Title and Phone	**Paul J. Laymon, (209) 379-1077**
Authorized Person to Sign and Submit Reports	**Michael Tollefson, Superintendent, (209) 372-0201**
Mailing Address	**Same**
Billing Address	**Same**
Type of Facility	**Publicly Owned Treatment Works (POTW)**
Threat to Water Quality	**2**
Complexity	**B**
Pretreatment Program	**Y**
Reclamation Requirements	**Producer**
Facility Permitted Flow	**0.288 million gallons per day (mgd) from the storage tanks to the South Fork of the Merced River**
Facility Design Flow	**0.105 mgd**
Watershed	**South Fork Merced Hydrologic Area (537.40)**
Receiving Water	**South Fork of the Merced River**
Receiving Water Type	**River**

The United States Department of the Interior, National Park Service, Yosemite National Park (hereinafter Discharger) is the owner and operator of Wawona Wastewater Treatment Facility (hereinafter WWTF) a POTW**.**

The WWTF discharges wastewater to the South Fork of the Merced River, a water of the United States and is currently regulated by Order No. 99-137, which was adopted on October 29, 1999 and expired on October 29, 2004. The terms of Order No. 99-137 automatically continued in effect after the permit expiration date.

The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on September 13, 2004. A site visit was conducted on October 13, 2004 to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

The WWTF provides sewerage service to the community of Wawona, which includes public and private visitor service facilities, Park Service housing facilities, the Wawona Hotel Complex, the Wawona Seventh-Day Adventist Camp, and nearby picnic areas. The population of Wawona varies during the year. During fall and winter, the population of the community can be as little as 160 residents, with weekend increases due to vacation and rental cabins. During summer and spring, the population increases to about 1,740 residents and visitors.

The WWTF is in Section 34, T4S, R21E, MDB&M, as shown on Attachment B.

A. Description of Wastewater Treatment or Controls

1. The WWTF provides tertiary treatment and includes an equalization tank, an activated sludge treatment system, coagulant and polymer injections, rapid mixing, flocculation, final sedimentation, and sand filtration. Phosphorous is removed by adding alum in the final treatment units. Effluent is chlorinated and pH balanced before storage in two above-ground storage tanks, which provide a total capacity of five million gallons. The storage tanks also provide chlorine contact time. Wastewater from the storage tanks is dechlorinated prior to discharge to the South Fork of the Merced River or the Wawona Golf Course for irrigation. The WWTF has an influent design treatment capacity of 0.105 mgd with 90% BOD_5, total suspended solids, and phosphorous removal rate efficiencies.

2. Sludge is digested in aerobic sludge digesters and transported to the El Portal WWTF. Sludge produced from both WWTFs is combined and hauled off-site by Pima Gro Systems, Inc., and applied on agricultural lands in the San Joaquin Valley. A general flow schematic for the WWTF is shown in Attachment C.

B. Discharge Points and Receiving Waters

Effluent from the WWTF is reclaimed on the Wawona Golf Course (Discharge 002), but the Discharger wishes to retain an NPDES permit for discharge to the South Fork of the Merced River (Discharge 001) when reclaimed water supplies exceed irrigation demand and storage capacity. Both Discharges, 001 and 002, are within the South Fork Merced Hydrologic Area. The discharges are summarized below:

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Disinfected tertiary municipal wastewater	37º, 32', 30" N	119º, 39', 19" W	South Fork Merced River
002	Disinfected tertiary municipal wastewater	37º, 32', 30" N	119º, 39', 00" W	Wawona Golf Course/Groundwater

1. Discharge 001

Discharge 001 to the South Fork of the Merced River occurs intermittently only when the golf course does not require irrigation and the storage tanks are full. The last discharge from the WWTF to the South Fork of the Merced River occurred in 1991. This Order and Order No. 99-137 prohibit discharges to the river unless the ratio of river flow to wastewater flow is 150:1.

Discharge to the river occurs through a diffuser, consisting of a pipe with equally spaced holes that were installed under cobbles in the river bed in 1989. The diffuser was washed out in January 1997 during an extreme flood event, and replaced in October 1997. The diffuser is located beneath the main flow channel and is designed to promote rapid mixing of the effluent with the river. The maximum discharge capacity of the diffuser is 200 gallons per minute (gpm).

Headwaters of the South Fork of the Merced River originate as snow melt from the west slope of the Sierra Nevada. Waters of the South Fork are of excellent quality. Based on data from the Discharger's self-monitoring reports for January 2001 – August 2004, the long-term average conductivity at 25 °C (EC) at the Discharger's upstream sampling location R-1 is 27 μmhos/cm.

From October 1, 1958 through September 30, 1968, river flows were measured continuously near the point of discharge by the United States Geological Survey (USGS). River flows in the Yosemite area are normally lowest during August and September. The lowest recorded flow during the river discharge window (December through May) between December 1958 and May 1968 was 3.7 cubic feet per second (cfs). Discharger self-monitoring reports for the period of January 2001 – August 2004 indicate that the minimum flow during the river discharge window was 5 cfs.

2. Discharge 002

Disinfected tertiary reclaimed wastewater is blended with river water in the storage tanks and used to irrigate the Wawona Golf Course. Wastewater gravity flows from the tanks to the golf course pump station, and is distributed through the golf course irrigation system. Wastewater applied to land either evaporates, is taken up by vegetation, or percolates into local groundwater. The discharge to land at the golf course is considered a discharge to groundwater.

Groundwater in the area flows southwest. Roughly half of the residents in Wawona own private wells. The Discharger supplies drinking water to the remaining residents from the South Fork of the Merced River. The surface water supply intake is upstream of the golf course and river discharge locations.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in Order No. 99-137 for discharges from Discharges 001 and 002**,** and representative monitoring data from the term of Order No. 99-137 are as follows:

Constituent (units)	Effluent Limitation			Effluent Monitoring Data January 2001–August 2004		
	Average Monthly	Average Weekly	Maximum Daily	Minimum Daily	Maximum Daily	Long Term Average[a]
BOD_5 (mg/L)	10	15	20	1	9.3	3.1
Total Suspended Solids (mg/L)	10	15	20	0.09	8.2	1.7
Settleable Solids (ml/L)	0.1	--	0.1	ND	ND	ND
Total Coliform (MPN/100 mL)	--	2.2[b]	23	<2	4	--
Total Phosphorous (mg/L)	0.5	0.75	1	ND	0.4	0.1
Turbidity (NTU)	--	--	2[c]	0	1.8	0.2
pH (s.u)	--	--	6.5 – 8.5[d]	6.5	8.4	--

a. Based on all detected monitoring data within the period of January 2001 – August 2004.
b. 7-day median limitation.
c. Daily average limitation.
d. Minimum-Maximum range.

2. The Report of Waste Discharge describes the discharge as follows:

Annual Average Influent Flow:	0.055 mgd
Annual Average Reclamation Flow:	0.089 mgd
Average Temperature:	21 °C Summer; 11 °C Winter

Constituent	Units	Average Daily
BOD_5@20 °C	mg/L	3.5
Suspended Solids	mg/L	1.6
Total Kjeldahl N	mg/L	1.2
Nitrate+Nitrite N	mg/L	24
Total Phosphorous	mg/L	0.17
pH	standard units	6.6 – 7.5 (range)

D. Compliance Summary

The Discharger has been able to achieve compliance with the effluent limitations of WDRs Order No. 99-137. However, the Discharger has not fully complied with Order No. 99-137's Monitoring and Reporting Program (MRP) or Regional Board directives to submit Priority Pollutant monitoring data for the receiving water. Notable areas of non-compliance are as follows:

1. On February 27, 2001 the Discharger was directed to conduct a receiving water and effluent monitoring study in accordance with the SIP. The Discharger has sampled the effluent for most priority pollutants, but has not sampled the receiving water.

2. The Discharger has not sampled the effluent for general minerals annually, as required by the MRP.

E. Planned Changes

There is a tentative plan to convert from gaseous chlorine and sulfur dioxide to liquid agents. This chemical change will not affect the current overall process. The intention is to remove the potential hazard of accidental gaseous releases. Engineering will begin in 2005.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this Facility to surface waters. This Order also serves as Waste Discharge Requirements pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

1. The action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

2. The action to update waste discharge requirements for the existing land discharge (Discharge 002) is exempt from the provisions of CEQA, in accordance with Title 14, CCR, Section 15301.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. The Regional Board adopted a Water Quality Control Plan for the Sacramento and San Joaquin River Basins, Fourth Edition (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Resources Control Board (State Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Beneficial uses applicable to sources of the Merced River, including the South Fork, are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	South Fork of the Merced River	Existing: Agricultural supply (AGR); hydropower generation (POW); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD). Potential: Municipal and domestic water supply (MUN)
002	Groundwater (Wawona Golf Course Discharge)	MUN, AGR, industrial service supply (IND), industrial process supply (PRO).

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

3. **State Implementation Policy.** On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP*).* The SIP was effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The SIP was amended by State Board on February 24, 2005. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.

4. **Anti-degradation Policy.** The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

5. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR § 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in the Order are at least as stringent as the effluent limitations in Order No. 99-137.

6. **Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires all NPDES permits to specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is in Attachment E.

7. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a), California Water Code, requires that "the regional board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRKA) indicate as discharged into the POTW, for which the state board or the regional board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective". USEPA's Envirofacts website (http://www.epa.gov/epahome/commsearch.htm) was searched on August 3, 2005 to determine whether the Discharger has had a recent toxic chemical release. The WWTF has not reported a recent toxic chemical release; therefore CWC section 133263.6(a) effluent limitations for toxic chemicals are not required.

8. **Stormwater Requirements.** USEPA promulgated Federal Regulations for stormwater on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates stormwater discharges from municipal sanitary sewer systems. Wastewater Treatment Plants are applicable industries under the stormwater program and are obligated to comply with the Federal Regulations. Stormwater discharges from the WWTF are not required to be regulated under the General Permit for Discharges of Storm Water Associated with Industrial Activities (State Water Resources Control Board, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001) because the design flow rate is less than 1 mgd.

D. Impaired Water Bodies on CWA 303(d) List

The South Fork of the Merced River is not listed as an impaired water body.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The federal Clean Water Act (CWA) mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law. (33 U.S.C., § 1311(b)(1)(C); 40 CFR 122.44(d)(1)) NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality." 40 CFR 122.44(d)(1)(vi) further provides that "[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits."

The Regional Board's Basin Plan, page IV-17.00, contains an implementation policy ("Policy for Application of Water Quality Objectives") that specifies that the Regional Board "will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives." This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Regional Board must establish effluent limitations using one or more of three specified sources, including EPA's published water quality criteria, a proposed state criterion (i.e., water quality objective), or an explicit state policy interpreting its narrative water quality criteria (i.e., the Regional Board's "Policy for Application of Water Quality Objectives")(40 C.F.R. 122.44(d)(1) (vi) (A), (B) or (C)). The Basin Plan contains a narrative objective requiring that: "All

waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life". The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as MUN, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Board may apply limits more stringent than MCLs. When a reasonable potential exists for exceeding a narrative objective, Federal Regulations mandate numerical effluent limitations and the Basin Plan narrative criteria clearly establish a procedure for translating the narrative objectives into numerical effluent limitations.

A. Discharge Prohibitions

1. As stated in Section A.7 of Attachment D, Federal Standard Provisions, this Order prohibits bypass from any portion of the treatment Facility. Federal Regulations, 40 CFR 122.41 (m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the Federal Regulations, 40 CFR 122.41 (m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. The State Board adopted a presidential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation. In the case of United States v. City of Toledo, Ohio (63 F. Supp 2d 834, N.D. Ohio 1999) the Federal Court ruled that "any bypass which occurs because of inadequate plant capacity is unauthorized…to the extent that there are 'feasible alternatives', including the construction or installation of additional treatment capacity".

   The Federal Clean Water Act, Section 301, requires that not later than July 1, 1977, POTWs meet effluent limitations based on secondary treatment or any more stringent limitation necessary to meet water quality standards. Federal Regulations, 40 CFR, Part 133, establish the minimum level of effluent quality attainable by secondary treatment for BOD, TSS, and pH. Tertiary treatment requirements for BOD and TSS are based on the technical capability of the process. Biochemical oxygen demand (BOD) is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The solids content—suspended (TSS) and settleable (SS)—is also an important characteristic of wastewater. The secondary and tertiary treatment standards for BOD and TSS are indicators of the effectiveness of the treatment processes.

2. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the WWTF. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the WWTF. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions.

3. Order No. 99-137 required that discharges to the South Fork of the Merced River only occur during the six months between December 1 and May 31. Instead of limiting the discharge to occur during the specified months, this Order prohibits discharge to the South Fork of the Merced River during the six months between June 1 and November 30.

B. Technology-Based Effluent Limitations

1. Scope and Authority

a. Regulations promulgated in 40 CFR §125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in Section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

b. The California Department of Health Services (DHS) has established statewide reclamation criteria in Title 22 of the California Code of Regulations for use of reclaimed water and has developed guidelines for discharges to surface waters. The Regional Board consults with the DHS on reclamation discharges in accordance with the terms specified in a Memorandum of Agreement between DHS and the State Board.

2. Applicable Technology-Based Effluent Limitations

a. **BOD, TSS, Settleable Solids, Turbidity, Total Coliform, and Filtration Rate.** Order No. 99-137 established effluent limitations for BOD, total suspended solids (TSS), settleable solids, turbidity, total coliform, and filtration rate, which are technology-based effluent limitations (TBELs) for tertiary treatment systems based on best professional judgment (BPJ). Results of water quality monitoring indicate that detected concentrations of these constituents meet the BPJ TBELs. The existing technology-based limitations are protective of Basin Plan beneficial uses. To ensure continued attainment of beneficial uses, this Order carries over the TBELs established by Order No. 99-137 with the exception of mass-based effluent limitations for BOD and TSS. Order No. 99-137 established mass-based effluent limitations for BOD and TSS using the maximum effluent discharge rate of 0.288 mgd. This Order establishes mass based effluent limitations for BOD and TSS using the design flow rate of 0.105 mgd, consistent with federal regulations contained in 40 CFR 122.45(b)(1).

b. **Chlorine, Total Residual.** The Discharger uses chlorine for disinfection of the effluent. COLD and WARM are beneficial uses of the Receiving Water. The Basin Plan includes a narrative water quality objective that "[a]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." Chlorine can cause toxicity to aquatic organisms when discharged to surface waters. USEPA recommends, in its Ambient Water Quality Criteria for the protection of fresh water aquatic life, maximum 1-hour average and 4-day average chlorine concentrations of 0.019 mg/L and 0.011 mg/L, respectively. The use of chlorine as a disinfectant presents a reasonable potential that it could be discharged in toxic concentrations. Disinfected tertiary effluent flows from the storage tank to the de-chlorination system before discharge to the South Fork of the Merced River. The de-chlorination system is capable of removing chlorine to the USEPA recommended criteria. This Order sets the USEPA recommended criteria as TBELs for total residual chlorine based on BPJ.

c. **Influent Flow.** Order No. 99-137 established an influent monthly average daily dry weather flow limitation of 0.105 mgd based on the WWTF design treatment capacity. The influent flow limitation is continued in this Order.

Table F-1.
Summary of Technology-based Effluent Limitations
Discharge Point 001

Constituent	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	0.105[1]	--	--	--	--
BOD 5-day @ 20°C	mg/L	10	15	20	--	--
	lbs/day[2]	8.7	13	17	--	--
	%removal	90	--	--	--	--
Total Suspended Solids	mg/L	10	15	17	--	--
	lbs/day[2]	8.7	13	17	--	--
	%removal	90	--	--	--	--
Settleable Solids	ml/L	0.1	--	0.1	--	--
The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 90 percent.						
The median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed. The number of total coliform bacteria shall not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.						
The turbidity in the effluent from the filtration unit and in the influent to the chlorination unit shall not exceed a daily average of 2 turbidity units and shall not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period, and shall not exceed 10 turbidity units at any time.						
The effluent total residual chlorine at Monitoring Location M-001 shall not exceed a 4-day average concentration of 0.01 mg/L, and shall not exceed a 1-hour average concentration of 0.02 mg/L.						
The maximum filtration rate shall not exceed 5 gpm/ft^2.						

1. Monthly average dry weather influent flow, as measured by the influent flow meter.
2. Based upon a design treatment capacity of 0.105 mgd.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR §122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other State plans and policies, or water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The receiving stream is the South Fork of the Merced River, which is tributary to the Merced River. Order No. 99-137 required that the discharge only occur when at least 150:1 (receiving water:effluent) dilution is available. This Order continues the requirement, thereby granting 150:1 dilution.

3. Determining the Need for WQBELs

a. Reasonable potential (RP) was determined by calculating the projected MEC (maximum effluent concentration) for each constituent and comparing it to applicable water quality criteria; if a criterion was exceeded, the discharge was determined to have reasonable potential to exceed a water quality objective for that constituent. The projected MEC (maximum effluent concentration) is determined by multiplying the observed MEC (the maximum detected concentration) by a factor that accounts for statistical variation. The multiplying factor is determined (for 99% confidence level and 99% probability basis) using the number of results available and the coefficient of variation (standard deviation divided by the mean) of the sample results. In accordance with the SIP, non-detect results were counted as one-half the detection level when calculating the mean. For all constituents for which the source of the applicable water quality standard is the CTR or NTR, the multiplying factor is 1. Reasonable potential evaluation was based on the methods used in the SIP and the USEPA Technical Support Document for Water Quality-Based Toxics Control [EPA/505/2-90-001].

b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs the Regional Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for copper and chlorine. Effluent limitations for these constituents are included in this Order.

c. The reasonable potential analysis for detected constituents is summarized below in Table F-2.

Table F-2.
RPA Summary for Detected Constituents
Discharge 001

Constituent	n[1]	cv[2]	RPA multiplier[3]	MEC	Adjusted MEC[4]	B[5]	Bproj[6]	WQO/WQC[7]	Source	RP
Nitrate-N (mg/L)	36	0.3	1.4	32	45	3	3.3	10	California Primary MCL	N
Conductivity(μmhos/cm)	151	0.3	1.1	1167	1284	60	68	900	California Secondary MCL	N

Constituent	n[1]	cv[2]	RPA multiplier[3]	MEC	Adjusted MEC[4]	B[5]	Bproj[6]	WQO/WQC[7]	Source	RP
Boron (mg/L)	1	0.6	13.2	0.1[9]	1.32	NA	NA	0.6	USEPA SNARL	I[8]
Chloride (mg/L)	1	0.6	13.2	32	422	17	19.7	106	Agricultural Water Quality Limits	N
Chromium (III) (μg/L)	1	0.6	--	1[9]	--	ND	NA	31/261	CTR CCC/CMC	N
Chromium (VI) (μg/L)	1	0.6	--	0.6[9]	--	NA	NA	11/16	CTR CCC/CMC	N
Copper (μg/L)	1	0.6	--	37	--	10	10.2	1.3/1.6	CTR CCC/CMC	Y
Mercury (μg/L)	1	0.6	--	0.001	--	0.4	NA	0.05	CTR HH	N
Chloroform (μg/L)	1	0.6	13.2	12	158.4	NA	NA	80	USEPA Primary MCL	I
Dichlorobromomethane (μg/L)	1	0.6	--	1.82[9]	--	NA	NA	0.56	CTR HH	I
Methyl Chloride (μg/L)	1	0.6	13.2	0.67[9]	8.84	NA	NA	3	USEPA Drinking Water Health Advisory	I

1. Number of data points available.
2. Coefficient of variation.
3. Statistically determined 99th percentile multiplier.
4. Determined using RPA multiplier.
5. Background receiving water concentration. ND=non-detect, NA=not available.
6. Projected background receiving water concentration, taking into consideration 150:1 dilution, background concentration, and the projected maximum effluent concentration.
7. Applicable water quality objectives or criteria.
8. Indeterminate. Not enough information to establish limitations.
9. Detected but not quantified value (DNQ). Data point was estimated because the value is greater than the method detection limit (MDL), but less than the minimum level (ML).

d. **Total Copper**. Based on information included in analytical laboratory results submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper. The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. COLD and WARM are beneficial uses of the receiving water. The criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for copper in freshwater are 0.960 for both the acute and the chronic criteria. Using the worst-case (lowest of receiving water and effluent) measured hardness of 9.9 mg/L, the corresponding criteria are 1.6 μg/L and 1.3 μg/L for the acute and chronic criteria, respectively. Copper has been detected in the receiving water at a concentration of 10 μg/L, therefore assimilative capacity for copper may not be available, and the CTR criteria must be met at the point of discharge. The Effluent Limitations for copper included in this Order are presented in total concentrations, and are based on CTR criteria for the protection of freshwater aquatic life.

e. **Total Phosphorous.** During the late 1980s, the Discharger conducted studies concerning potential algal growth on the main fork of the Merced River near El Portal. Evaluation of the data generated from these studies indicated that control of phosphorous concentrations in the El Portal WWTF's effluent to a level below 0.5 mg/L would accomplish sufficient nutrient removal so as not to induce algal growth in the Merced River. Based on the watershed similarities of the Merced River near El Portal and the South Fork of the Merced River near Wawona, Order No. 99-137 assigned phosphorous limitations of 0.5 mg/L (monthly average), 0.75 mg/L (weekly average), and 1 mg/L (daily maximum). The limitations were applied to Discharges 001 and 002. To protect the receiving waters from nutrient overloading and in accordance with federal Antibacksliding provisions, the phosphorous limitations are continued in this Order. Order No. 99-137 established mass-based effluent limitations for Total Phosphorous using the maximum effluent discharge rate of 0.288 mgd. This Order establishes mass based effluent limitations for Total Phosphorous using the design flow rate of 0.105 mgd, consistent with federal regulations contained in 40 CFR 122.45(b)(1).

f. **Boron, Dichlorobromomethane, and Methyl Chloride.** Insufficient information is available to determine whether boron, dichlorobromomethane, and methyl chloride levels in the discharge have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality criteria or objectives. There is only one effluent data point available for each of these constituents, and the data points have been estimated as present, but not quantifiable or DNQ. Instead of limitations, additional monitoring has been established for boron, dichlorobromomethane, and methyl chloride with a reopener provision should monitoring results indicate that the discharge has the reasonable potential to cause or contribute an exceedance of water quality objectives.

g. **Chloroform.** Insufficient information is available to determine whether chloroform levels in the discharge have reasonable potential to cause or contribute to an in-stream excursion above applicable water quality objectives. There is only one effluent data point available, and the data point is less than the respective WQO. Instead of limitations, additional monitoring has been established with a reopener provision should monitoring results indicate that the discharge has the reasonable potential to cause an exceedance of water quality objectives for chloroform.

h. **pH.** The Basin Plan includes numeric water quality objectives that the pH "…not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." The South Fork of the Merced River is designated as having both COLD and WARM beneficial uses. An effluent limitation for pH is included in this Order based on the Basin Plan objectives for pH.

4. WQBEL Calculations

a. The Discharger conducted monitoring for priority and non-priority pollutants. The analytical results of one comprehensive sampling event were submitted to the Regional Board. The results of this sampling event were used in developing the requirements of this Order. Effluent limitations are included in this Order to protect the beneficial uses of the receiving stream and to ensure that the discharge complies with the Basin Plan objective that toxic substances not be discharged in toxic amounts. Unless otherwise noted, all mass limitations in this Order were calculated by multiplying the concentration limitation by the design flow and the appropriate unit conversion factors.

b. Effluent Limitations for water quality-based limitations were calculated in accordance with Section 1.4 of the SIP and the TSD. The following paragraphs describe the general methodology used for calculating Effluent Limitations.

c. **Flow.** The WWTF was designed to provide a tertiary level of treatment for up to its design flow of 0.105 mgd. However, the effluent flows to storage tanks and is diluted with water drawn from the South Fork of the Merced River and is not discharged directly to the South Fork of the Merced River. Because effluent is stored, Order No. 99-137 established a maximum daily effluent discharge limitation of 0.288 mgd for discharges to the South Fork of the Merced River from the effluent storage tanks based on the design flow at the diffuser. Order No. 99-137 also limited the discharge to the six months between December 1 and May 31. This Order continues the maximum daily effluent discharge limitation of 0.288 mgd and prohibits discharges to the South Fork of the Merced River during the six months between April 1 and November 30.

d. **Mass-based Effluent Limitations.** Mass-based limitations were based upon the design treatment capacity of 0.105 mgd in accordance with 40 CFR 122.45(b)(1).

e. USEPA recommends a maximum daily limitation rather than an average weekly limitation for water quality based permitting. Where applicable, WQBELs based on weekly averages were converted to maximum daily effluent limitations using the procedures outlined in the TSD.

f. **Calculations for Effluent Limitations.** Using copper as an example, the following demonstrates how water quality based effluent limits were established for this Order. The process for developing these limits is in accordance with Section 1.4 of the SIP.

Step 1: For each constituent requiring an effluent limit, identify the applicable water quality criteria or objective. For each criterion determine the effluent concentration allowance (ECA) using the following steady state equation:

ECA = C + D(C-B) when C>B, and
ECA = C When C<= B,

Where C = The priority pollutant criterion/objective, adjusted if necessary for hardness and translators. In this Order a hardness value of 180 mg/L (as $CaCO_3$) was used for development of hardness-dependant criteria.
D = The dilution credit, and
B = The ambient background concentration

As discussed above, dilution credits for copper are not allowed because of lack of assimilative capacity; therefore:

ECA = C

For copper, the applicable water quality criteria are:

ECA_{acute}= 1.6 μg/L
$ECA_{chronic}$= 1.3 μg/L
$ECA_{human\ health}$= 1300 μg/L

. **Step 2:** For each ECA based on aquatic life criterion/objective, determine the long-term average discharge condition (LTA) by multiplying the ECA by a factor (multiplier). The multiplier is a statistically based factor that adjusts the ECA to account for effluent variability. The value of the multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 3 of the SIP and will not be repeated here.

$LTA_{acute} = ECA_{acute} \times Multiplier_{acute}$

$LTA_{chronic} = ECA_{chronic} \times Multiplier_{chronic}$

The CV for the data set must be determined before the multipliers can be selected and will vary depending on the number of samples and the standard deviation of a data set. If the data set is less than 10 samples, or at least 80% of the samples in the data set are reported as non-detect, the CV shall be set equal to 0.6.

For copper, the following data was used to develop the acute and chronic LTA using Table 1 of the SIP:

No. of Samples	CV	$Multiplier_{acute}$	$Multiplier_{chronic}$
1	0.6	0.321	0.527

LTA_{acute} = 1.6 μg/L x 0.321 = 0.514 μg/L

$LTA_{chronic}$ = 1.3 μg/L x 0.527 = 0.685 μg/L

Step 3: Select the most limiting (lowest) of the LTA.

LTA = most limiting of LTA_{acute} or $LTA_{chronic}$

For copper, the most limiting LTA was the LTA_{acute}

LTA = 0.514 μg/L

Step 4: Calculate the water quality based effluent limits by multiplying the LTA by a factor (multiplier). Water quality-based effluent limits are expressed as Average Monthly Effluent Limitations (AMEL) and Maximum Daily Effluent Limitation (MDEL). The multiplier is a statistically based factor that adjusts the LTA for the averaging periods and exceedance frequencies of the criteria/objectives and the effluent limitations. The value of the multiplier varies depending on the probability basis, the coefficient of variation (CV) of the data set, the number of samples (for AMEL) and whether it is monthly or daily limit. Table 2 of the SIP provides pre-calculated values for the multipliers based on the value of the CV and the number of samples. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 5 of the SIP and will not be repeated here.

$AMEL_{aquatic\ life} = LTA \times AMEL_{multiplier}$

$MDEL_{aquatic\ life} = LTA \times MDEL_{multiplier}$

AMEL multipliers are based on a 95th percentile occurrence probability, and the MDEL multipliers are based on the 99th percentile occurrence probability. If the number of samples is less than four (4), the default number of samples to be used is four (4).

For copper, the following data was used to develop the AMEL and MDEL for aquatic life using Table 2 of the SIP:

No. of Samples	CV	$Multiplier_{MDEL}$	$Multiplier_{AMEL}$
1	0.6	3.11	1.55

$AMEL_{aquatic\ life}$ = 0.514 x 1.55 = 0.80 μg/L

$MDEL_{aquatic\ life}$ = 0.514 x 3.11 = 1.6 μg/L

Step 5: For the ECA based on human health, set the AMEL equal to the $ECA_{human\ health}$

$AMEL_{human\ health} = ECA_{human\ health}$

For copper:

$AMEL_{human\ health}$ = 1300 μg/L

Step 6: Calculate the MDEL for human health by multiplying the AMEL by the ratio of the $Multiplier_{MDEL}$ to the $Multiplier_{AMEL}$. Table 2 of the SIP provides pre-calculated ratios to be used in this calculation based on the CV and the number of samples.

$MDEL_{human\ health} = AMEL_{human\ health}$ x ($Multiplier_{MDEL}$ / $Multiplier_{AMEL}$)

For copper, the following data was used to develop the $MDEL_{human\ health}$:

No. of Samples	CV	$Multiplier_{MDEL}$	$Multiplier_{AMEL}$	Ratio
1	0.60	3.11	1.55	2.01

$MDEL_{human\ health}$ = 1300 μg/L x 2.01 = 2600 μg/L

Step 7: Select the lower of the AMEL and MDEL based on aquatic life and human health as the water-quality based effluent limit for the Order.

For copper:

$AMEL_{aquatic\ life}$	$MDEL_{aquatic\ life}$	$AMEL_{human\ health}$	$MDEL_{human\ health}$
0.80 μg/L	1.6 μg/L	1300 μg/L	2600 μg/L

The lowest (most restrictive) effluent limits are based on aquatic toxicity and were incorporated into this Order. These limits will be protective of aquatic life.

Mass-based effluent limitations, or mass emission rates (MERs), for WQBELs applicable to Discharge 001 are calculated as follows:

$$MER = 8.34\left(\frac{lb-L}{mg-Mgal}\right)\times AMEL-or-MDEL\times 0.105(mgd)$$

Where 0.105 mgd is the WWTF design flow rate.

Table F-3.
Summary of Water Quality-based Effluent Limitations
Discharge Point 001

Constituent	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow[1]	mgd	--	--	0.288	--	--
Total Copper	µg/L	0.80	--	1.6	--	--
	lbs/day	$7.0x10^{-4}$	--	$1.4x10^{-3}$	--	--
Total Phosphorous	mg/L	0.5	0.75	1	--	--
	lbs/day	0.44	0.66	0.88	--	--
pH	standard units	--	--	--	6.5	8.5

1. Compliance shall be determined at Monitoring Location M-001 for Maximum Daily Flow.

5. Whole Effluent Toxicity (WET)

a. **Acute Toxicity.** Order No. 99-137 established the following acute toxicity limitations based on Basin Plan requirements: the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival. This Order continues the acute toxicity limitations established by Order No. 99-137.

D. Final Effluent Limitations

1. 40 CFR §122.45 states that:

   a. "In the case of POTWs, permit effluent limitations…shall be calculated based on design flow."

   b. "For continuous discharges all permit effluent limitations…shall unless impracticable be stated as…[a]verage weekly and average monthly discharge limitations for POTWs."

   c. "All pollutants limited in permits shall have limitations…expressed in terms of mass except…[f]or pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass…Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations."

Table F-4.
Summary of Final Effluent Limitations
Discharge Point 001

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	mgd	0.105[1]	--	0.288[2]	--	--	Order No. 99-137, Antibacksliding
BOD 5-day @ 20°C	mg/L	10	15	20	--	--	BPJ, Order No. 99-137, Antibacksliding
	lbs/day	8.7	13	17	--	--	
	%removal	90	--	--	--	--	
Total Suspended Solids	mg/L	10	15	17	--	--	BPJ, Order No. 99-137, Antibacksliding
	lbs/day	8.7	13	17	--	--	
	%removal	90	--	--	--	--	
Settleable solids	ml/L	0.1	--	0.1	--	--	BPJ, Order No. 99-137, Antibacksliding
Total Phosphorous	mg/L	0.5	0.75	1	--	--	Order No. 99-137, Antibacksliding
	lbs/day	0.44	0.66	0.88	--	--	
pH	standard units	--	--	--	6.5	8.5	Basin Plan
Total Copper	µg/L	0.80	--	1.6	--	--	CTR Freshwater Aquatic Life Criteria
	lbs/day	7.0×10^{-4}	--	1.4×10^{-3}	--	--	
The median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed. The number of total coliform bacteria shall not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.							BPJ, Order No. 99-137, Antibacksliding
The turbidity in the effluent from the filtration unit and in the influent to the chlorination unit shall not exceed a daily average of 2 turbidity units and shall not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period, and shall not exceed 10 turbidity units at any time.							BPJ, Order No. 99-137, Antibacksliding
The maximum filtration rate shall not exceed 5 gpm/ft^2.							BPJ, Order No. 99-137, Antibacksliding
The effluent total residual chlorine at Monitoring Location M-001 shall not exceed a 4-day average concentration of 0.01 mg/L, and shall not exceed a 1-hour average concentration of 0.02 mg/L.							BPJ, Basin Plan

1. Monthly average influent flow, as measured by the influent flow meter.
2. Compliance shall be determined at Monitoring Location M-001 for Maximum Daily Flow.

E. Interim Effluent Limitations

1. As stated in Finding I of this Order, the USEPA adopted the NTR and the CTR, which contain promulgated water quality criteria applicable to this discharge and the State Water Resources Control Board adopted the SIP, which contains guidance on implementation of the NTR and CTR. CTR and NTR criteria along with beneficial use designations contained the Basin Plan and antidegradation policies constitute water quality standards pursuant to the Clean Water Act. The SIP, Section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must: be based on current treatment plant performance or existing permit limitations, whichever is more stringent; include interim compliance dates separated by no more than one year, and; be included in the Provisions. The interim limitations in this Order are based on current WWTF performance. In developing the interim limitations, where there are ten or more sampling data points available, sampling and laboratory variability are accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists*, Kennedy and Neville). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data. Where actual sampling shows an exceedance of the proposed 3.3 standard deviations interim limit, the maximum detected concentration has been established as the interim limitation. When there are less than ten sampling data points available, the *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001) (TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. Therefore, when there are less than ten sampling results for a constituent, the interim limitation is based on the corresponding multiplier from Table 3.1 of the TSD multiplied by the maximum observed sampling point. Interim limitations are established when compliance with NTR- and CTR-based Effluent Limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final Effluent Limitations, but in compliance with the interim Effluent Limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the Effluent Limitation can be achieved.

2. The following interim limitations for copper establish an enforceable maximum effluent concentration until compliance with the final effluent limitations can be achieved:

	Maximum Daily
Copper	488 µg/L
	0.43 lbs/day[1]

1. Based on the design flow of 0.105 mgd.

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications

1. **Reclamation Specifications.** Reclamation Specifications established in this Order are consistent with the requirements in Title 22 of the California Code of Regulations, developed by the California Department of Health Services for the purveyance and use of reclaimed water.

2. **BOD, TSS, Settleable Solids, Turbidity, Total Coliform, and Filtration Rate.** Order No. 99-137 established reclamation specifications for BOD, total suspended solids (TSS), settleable solids, turbidity, total coliform, and filtration rate, which are technology-based treatment specifications for tertiary treatment systems based on Department of Health Services (DHS) requirements for the production of reclaimed water contained in Title 22, California Code of Regulations and best

professional judgment (BPJ). As the reclaimed water produced at the WWTF is used to irrigate the Wawona Golf Course, a public access golf course, this Order continues the reclamation specifications established by Order No 99-137 with the exception of mass-based discharge specifications for BOD and TSS. Order No. 99-137 established mass-based discharge specifications for BOD and TSS using the maximum effluent discharge rate of 0.288 mgd. This Order establishes mass-based discharge specifications for BOD and TSS using the design flow rate of 0.105 mgd.

3. **Total Phosphorous.** Order No. 99-137 assigned phosphorous discharge specifications of 0.5 mg/L (monthly average), 0.75 mg/L (weekly average), and 1 mg/L (daily maximum). The specifications were applied to Discharges 001 and 002. The total phosphorous discharge specifications are continued in this Order. Order No. 99-137 established mass-based discharge specifications for total phosphorous using the maximum effluent discharge rate of 0.288 mgd. This Order establishes mass based effluent limitations for total phosphorous using the design flow rate of 0.105 mgd.

4. **pH.** Order No 99-137 established discharge specifications requiring that effluent pH be within the limits of 6.5-8.5. The pH discharge specifications are continued in this Order.

5. **Influent Flow.** Order No. 99-137 established an influent monthly average daily dry weather flow limitation of 0.105 mgd. The influent flow limitation is continued in this Order.

Table F-5.
Summary of Reclamation Specifications
Discharge Point 002

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	mgd	0.105[1]	--	--	--	--	BPJ, Order No. 99-137, Antibacksliding
BOD 5-day @ 20°C	mg/L	10	15	20	--	--	BPJ, Order No. 99-137, Antibacksliding
	lbs/day	8.7	13	17	--	--	
	%removal	90	--	--	--	--	
Total Suspended Solids	mg/L	10	15	17	--	--	BPJ, Order No. 99-137, Antibacksliding
	lbs/day	8.7	13	17	--	--	
	%removal	90	--	--	--	--	
Settleable solids	ml/L	0.1	--	0.1	--	--	BPJ, Order No. 99-137, Antibacksliding
Total Phosphorous	mg/L	0.5	0.75	1	--	--	BPJ, Order No. 99-137, Antibacksliding
	lbs/day	0.44	0.66	0.88	--	--	
pH	standard units	--	--	--	6.5	8.5	Basin Plan
The median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed. The number of total coliform bacteria shall not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.							BPJ, Order No. 99-137, Antibacksliding, DHS Title 22
The turbidity in the effluent from the filtration unit and in the influent to the chlorination unit shall not exceed a daily average of 2 turbidity units and shall not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period, and shall not exceed 10 turbidity units at any time.							BPJ, Order No. 99-137, Antibacksliding, DHS Title 22
The maximum filtration rate shall not exceed 5 gpm/ft^2.							BPJ, Order No. 99-137, Antibacksliding, DHS Title 22
Use of recycled water shall comply with all the terms and conditions of the most current Title 22 regulations.							DHS Title 22

1. Monthly average dry weather influent flow, as measured by the influent flow meter.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. The Clean Water Act, Section 303(a-c), required states to adopt numeric criteria where they are necessary to protect designated uses. The Regional Board adopted numeric criteria in the Basin Plan. The Basin Plan is a regulatory reference for meeting the State and federal requirements for water quality control (40 CFR 131.20). State Board Resolution No. 68-16, the Antidegradation Policy, does not allow changes in water quality less than that prescribed in Water Quality Control Plans (Basin Plans). The Basin Plan states that; "The numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses." This Order contains Receiving Water Limitations based on the Basin Plan numerical and narrative water quality objectives for Biostimulatory Substances, Chemical Constituents, Color, Dissolved Oxygen, Floating Material, Oil and Grease, pH, Pesticides, Radioactivity, Salinity, Sediment, Settleable Material, Suspended Material, Tastes and Odors, Temperature, Toxicity, and Turbidity.

2. **Fecal Coliform:** The South Fork of the Merced River has been designated as having the beneficial use of contact recreation (REC-1). For water bodies designated as having REC-1 as a beneficial use, the Basin Plan includes a water quality objective limiting the "…fecal coliform concentration based on a minimum of not less than five samples for any 30-day period…" to a maximum geometric mean of 200 MPN/100 ml. The objective also states that "…[no] more than ten percent of the total number of samples taken during any 30-day period [shall] exceed 400/100 ml." This objective is included in the Order as a receiving water limitation.

3. **Dissolved Oxygen:** The South Fork of the Merced River has been designated as having the beneficial use of cold freshwater aquatic habitat (COLD). For water bodies designated as having COLD as a beneficial use, the Basin Plan includes a water quality objective of maintaining a minimum of 7.0 mg/L of dissolved oxygen. Since the beneficial use of COLD does apply to the South Fork of the Merced River, a receiving water limitation of 7.0 mg/L for dissolved oxygen was included in the Order.

   For surface water bodies outside of the Delta, the Basin Plan includes the water quality objective that "…the monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation." This objective was included as a receiving water limitation in the Order.

4. **pH:** For all surface water bodies in the Sacramento River and San Joaquin River basins, the Basin Plan includes water quality objectives stating that "[t]he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." The Order includes receiving water limitations for both pH range and pH change.

   The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5 range, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in the Order.

5. **Temperature:** The South Fork of the Merced River has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that "[a]t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature." The Order includes a receiving water limitation based on this objective.

6. **Turbidity:** The Basin Plan includes the following objective: "*Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits*:

   a. Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.

   b. Where natural turbidity is between 5 and 10 NTUs, increases shall not exceed 20 percent.

   c. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU.

   c. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent."

B. Groundwater

1. The Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin, Fourth Edition (hereafter Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, and contains implementation plans and policies for protecting all waters of the Basin. The Basin Plan includes plans and policies of the State Board incorporated by reference. Pursuant to Section 13263(a) of the CWC, waste discharge requirements must implement the Basin Plan and, by extension, the beneficial uses of surface and groundwaters potentially affected by the discharge.

2. The Basin Plan designates the beneficial uses of groundwater in the discharge area as MUN, AGR, IND, and PRO.

3. There is discharge to underlying groundwater from the discharge of reclaimed water on the Wawona Golf Course. Reclaimed water is blended with water from the South Fork of the Merced River and used to irrigate the golf course. The characteristics of the reclaimed water are unknown because effluent is blended with river water prior to discharge. However, it is unlikely that the discharge will cause an impact on underlying groundwater because the discharge is diluted with river water and an appreciable amount of snowmelt is also discharged to underlying groundwater, further diluting the reclaimed water discharge.

4. The following Groundwater Limitation in this Order is based on the State Antidegradation Policy, State Board Resolution 68-16: Neither the WWTF nor the recycling of wastewater shall cause underlying groundwater to contain waste constituents in concentrations greater than background water quality unaffected by waste sources.

VI. MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Regional Boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this WWTF.

A. Influent Monitoring

The influent monitoring in the Monitoring and Reporting Program is required to determine compliance with TBELs for BOD and TSS. The influent monitoring required by this Order is identical to the influent monitoring required by Order No. 99-137.

B. Effluent Monitoring

The effluent monitoring in the Monitoring and Reporting Program is required to determine compliance with the TBELs, Effluent Limitations, and Discharge Specifications in this Order. Much of the required monitoring is

carried over from Order No. 99-137. The following are changes from Order No. 99-137's monitoring and reporting program:

1. **Detected Priority Pollutants:** Annual monitoring is required for the following priority pollutants that have been detected in the effluent, but for which there is insufficient information available to assign effluent limitations: dichlorobromomethane, chloroform, and methyl chloride. Normally, effluent monitoring is assigned just prior to discharge to the receiving water. However, internal monitoring locations may be established to allow detection of a pollutant when a waste stream is significantly diluted (40 CFR 122.45(h)). WWTF effluent is diluted with river water in the storage tanks prior to discharging to the South Fork of the Merced River. Therefore, internal monitoring for dichlorobromomethane, chloroform, and methyl chloride is established in this Order.

2. **Priority Pollutants:** Order No. 99-137 required annual monitoring of priority pollutants with the option to discontinue after two monitoring events. Effluent priority pollutant monitoring is required once during the term of this Order. Priority pollutant monitoring is required by Section 1.3 of the SIP. Internal monitoring for priority pollutants is established in this Order in accordance with 40 CFR 122.45(h).

3. **Copper Monitoring:** Copper monitoring is required monthly during discharge to the South Fork of the Merced River to determine compliance with interim and final effluent limitations. Final discharge monitoring and internal monitoring for copper are established in this Order in accordance with 40 CFR 122.45(h).

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity:** Chapter III of the Basin Plan, establishes narrative toxicity water quality objectives and requires that at a minimum compliance with this objective shall be evaluated with a 96-hour bioassay. Order No. 99-137 required quarterly acute toxicity monitoring. This Order requires annual acute toxicity testing that implements requirements of the Basin Plan.

2. **Chronic Toxicity:** Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters. Therefore, in accordance with the SIP, the Discharger will be required to conduct chronic toxicity testing in order to determine reasonable potential and establish WQBELs as necessary. Order No. 99-137 required monthly monitoring for chronic toxicity. This Order requires one chronic toxicity monitoring event to take place during the first discharge to the South Fork of the Merced River during the term of this Order.

D. Receiving Water Monitoring

1. Surface Water

Receiving water monitoring upstream and downstream of Discharge 001 is required to determine the impacts of the discharge on the receiving waters and also to monitor background levels of pollutants. Much of the required receiving water monitoring is carried over from Order No. 99-137. The following are major changes from Order No. 99-137's receiving water monitoring and reporting program:

- **Priority Pollutants:** Receiving water priority pollutant monitoring is required once during the term of this Order. Priority pollutant monitoring is required by Section 1.3 of the SIP.

- **Copper Monitoring:** Monthly receiving water monitoring for copper is required to determine the effects of the discharge on the receiving waters.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. **Sludge Monitoring:** Annual sludge monitoring for metals is required by this Order. The required sludge monitoring under this Order is identical to the monitoring required by Order No. 99-137.

2. **Water Supply Monitoring:** The required water supply monitoring under this Order is identical to the monitoring required by Order No. 99-137.

3. **Filtration Rate Monitoring:** Filtration rate monitoring is required to determine compliance with the maximum filtration rate effluent limitation and discharge specification.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions

Standard Provisions, which in accordance with 40 CFR §§122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D to the Order.

40 CFR Section 122.41(a) through 122.41(n) establishes conditions that apply to all NPDES permits. In accordance with 40 CFR Section 122.41, all conditions applicable to NPDES permits are to be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR Section 123.25(a)(12) allows the State to omit or modify conditions to impose more stringent requirements. In accordance with Section 123.25, this Order omits Federal conditions that address enforcement authority specified in 40 CFR Sections 122.41(a)(2), 122.41(a)(3), 122.41(j)(5), and 122.41(k)(2) because enforcement authority under the CWC is more stringent. In accordance with 40 CFR Section 122.41, this Order includes a specific citation to Sections 13385, 13386, and 13387 of the CWC that incorporates the Regional Board's enforcement authority by reference.

2. Regional Board Standard Provisions

The Regional Board adopted "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)," dated February 2004. The provisions required in this section of the Order together with the Federal Standard Provisions contained in Attachment D fully incorporate the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)," dated February 2004.

B. Monitoring and Reporting Program Requirements

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Regional Boards to require technical and monitoring reports. The Monitoring and Reporting Program in Attachment E of this Order establishes monitoring and reporting requirements to implement federal and State requirements.

C. Special Provisions

1. Reopener Provisions

a. **Provision VI.C.1.a, Reopener Provision.** This provision allows the Regional Board to reopen this Order to include any newly adopted receiving water standards.

b. **Provision VI.C.1.b, Chronic Toxicity Reopener Provision.** If the chronic toxicity testing specified in Section VI.C.2 indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, this Order shall be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Board, this Order may be reopened and a limitation based on that objective included.

c. **Provision VI.C.1.c, Studies/Monitoring Reopener Provision.** This provision allows the Regional Board to reopen this Order if review of the study results specified in Section VI.C.2 of this Order or any effluent monitoring show that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective.

2. Special Studies and Additional Monitoring Requirements

a. **Provision VI.C.2.a, Toxicity Monitoring.** In accordance with Section 4 of the SIP, this provision requires the Discharger to conduct additional studies to evaluate toxicity in the discharge and eventually reduce that toxicity (Toxicity Identification Evaluation (TIE) and Toxicity Reduction Evaluation (TRE)) if chronic toxicity monitoring indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity. This Provision also allows the Order to be re-opened should the data gathered indicate the need for toxicity limitations.

b. **Provision VI.C.2.b, Priority Pollutants.** According to Section 1.2 of the SIP, the Discharger must report data for all the priority pollutants listed in the CTR. The data are used to determine reasonable potential for these constituents to cause or contribute to an exceedance of applicable water quality criteria and to calculate effluent limitations. On February 27, 2001 the Discharger was directed to conduct a receiving water and effluent monitoring study in accordance with the SIP. The Discharger sampled the effluent for most priority pollutants, but has not sampled the receiving water. Provision VI.C.2.b of this Order requires the Discharger to provide priority pollutant data for the effluent and receiving water.

c. **Provision VI.C.2.c, Dioxin Monitoring.** According to Section 3 of the SIP, the Discharger must determine dioxin toxic equivalents by analyzing their effluent for the 17 congeners listed in Table 4, Section 3, of the SIP. On February 27, 2001 the Discharger was directed to conduct an effluent dioxin monitoring study in accordance with the SIP. The Discharger has not conducted the dioxin compounds monitoring study. Provision VI.C.2.c of this Order requires the Discharger to provide effluent dioxin compounds monitoring data.

3. Best Management Practices and Pollution Prevention

Stormwater Requirements. Stormwater discharges from the Facility are not required to be regulated under the General Permit for Discharges of Storm Water Associated with Industrial Activities (State Water Resources Control Board, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001) because the design flow rate is less than 1 mgd.

4. Compliance Schedules

Provision VI.C.4, Compliance Schedule and Infeasibility Study. The SIP, Section 2.1, provides that: "Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit." Section 2.1 further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted:…"(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control and/or pollution minimization efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable." This Order requires the Discharger to provide this information. The new water quality-based effluent limitations for copper become effective on **1 January 2006** if a compliance schedule justification is not completed and submitted by the Discharger to the Regional Board. Otherwise, final water quality-based effluent limitations for copper become effective in the shortest time possible as approved by the Executive Officer, but in no case later than
20 October 2010.

5. Construction, Operation, and Maintenance Specifications

a. **Provision VI.C.5.a.ii, Surface Water Discharge Minimization.** This Provision requires that the Discharger maximize reclamation, and only discharge to the South Fork of the Merced River when irrigation of the golf course is not necessary (snow or saturated soil conditions) and storage capacity has been reached. This Provision is consistent with Basin Plan and California Water Code requirements to utilize reclamation prior to other wastewater discharge options.

b. **Provision VI.C.5.a.iv, Chlorine Disinfection.** DHS statewide reclamation criteria contained in Title 22, section 60301.230, of the California Code of Regulations requires that the chlorine disinfection process following filtration provide a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow. Provision VI.C.5.a.iv establishes minimum CT and modal contact time operation specifications based on DHS reclamation criteria.

6. Special Provisions for Municipal Facilities (POTWs Only)

a. **Provision VI.C.6.a, Sanitary Sewer Overflow Requirements:**

The chief causes of sanitary sewer overflows include lack of maintenance, blockages due to grease, roots, and debris, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm water or groundwater inflow/infiltration, insufficient capacity, and contractor caused blockages.

Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause exceedance of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.

The Discharger is responsible for all necessary steps to adequately maintain and operate its sanitary sewer collection system. This Order requires the Discharger to prepare and implement a Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Wawona Wastewater Treatment Facility. As a step in the WDR adoption process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Board has notified the permittee and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following: Posting a Notice of Public Hearing at the Mariposa County Board of Supervisors Chamber, local post office, and the Facility on 2 September 2005.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to the Executive Officer at the Regional Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Board, written comments should be received at the Regional Board offices by 5:00 p.m. on 3 October 2005

C. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: 20/21 October 2005
Time: 8:30 a.m.
Location: Regional Water Quality Control Board
11020 Sun Center Dr #200
Rancho Cordova, CA

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is http://www.waterboards .ca.gov/centralvalley/, where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Board by calling (559) 445-5116.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this Facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Geoffrey Anderson at (559) 445-5919.